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# PATENT SPECIFICATION

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## COMPLETE SPECIFICATION

### Improvements in and relating to Coating Compositions for making Coated Papers

We, Dr. KURT SCHWABE, of Kriebstein, Post Waldheim in Saxony, Germany, and Dr. RALF NIETHAMMER, trading as KÜLBER & NIETHAMMER, of Schönberg near Waldheim, in Saxony, Germany, both of German nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a process for producing coating compositions from filling materials and binding agents for making coated paper.

Coating masses for coated papers, such as art paper, chromo paper, etc., consist, as a rule, of a filler, as kaolin, blanc fixe, etc., and of binding agents, for instance casein, gelatin, starch, etc. These known binding agents form a considerable portion of the coating mass which provides a smooth dense surface possessing good printing properties and prevents scaling off of the coating layer. This involves not only high costs for coated paper but also a considerable consumption of valuable vegetable and animal raw materials.

It has been found that water soluble cellulose ethers can completely or partly replace the known binding agents, even if added to the coating masses only in slight quantities. Additions amounting to a few per cent of these compounds suffice already to effect sufficient binding of the fillers. Furthermore, they impart a beautiful closed or dense surface, bright lustre and excellent printing properties to coated paper.

It is known to employ cellulose ether, such as methyl cellulose, as binding material or adhesive, but it is a new and surprising teaching that slight additions of these compounds to coating masses develop such binding power that the coating firmly adheres to the paper and does not scale off during folding even if thick layers thereof are applied. It could further not be expected that even slight amounts of such compounds would considerably improve the glaze and smoothness as well as the printing properties of coating masses.

It has also been proposed to treat paper with a solution in alkali of cellulose glycolic acid to which fillers may be added.

According to the present invention a coating composition for coated paper is prepared by adding to a filler a binding agent comprising a neutral solution containing a relatively small amount of one or more water soluble cellulose ethers.

The following examples explain various possibilities of applying the process.

#### EXAMPLE 1.

1,000 parts of water are heated to the boiling point and poured over 50 parts of technical methyl cellulose. After cooling 500 parts of ice-cooled water are stirred into the mixture until a highly viscous solution is produced with which 2,000 parts of China clay are mixed by stirring. The resulting viscous paste can be used for coating art paper and also for coating paper in the paper-making machine. After calendering the paper has an extremely glossy finish.

#### EXAMPLE 2.

To 500 parts of a 5 per cent. starch solution heated to the boiling point 50 parts of methyl cellulose are added by stirring. After cooling, 4,500 parts of 5 per cent. starch solution cooled to at least 10° C. are added by stirring until the methyl cellulose is completely dissolved. The viscous liquid is stirred into a paste with 5,000 parts of calcium carbonate and yields a viscous coating mass.

#### EXAMPLE 3.

In 1,000 parts of water 50 parts of the sodium salt of cellulose glycolic acid are dissolved. Into the solution 1,000 parts of white pigment are stirred. The resulting mass is suited for producing thin coating layers.

#### EXAMPLE 4.

Into 2,000 parts of a weak soda solution are dissolved 20 parts of cellulose glycolic acid solution and 100 parts of casein and 100 2,000 parts of blanc fixe are introduced by stirring. The viscous paste obtained is substantially neutral and represents a good coating mass.

Having now particularly described and ascertained the nature of our said inven-

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tion, and in what manner the same is to be performed, we declare that what we claim is:—

1. A process for preparing coating compositions for coated papers wherein to a filler is added a binding agent comprising a neutral solution containing a relatively small amount of one or more water-soluble cellulose ethers.
- 10 2. A coating composition for coated papers comprising a filler to which is added a binding agent comprising a neutral solution containing a relatively small amount of one or more water-soluble cellulose ethers.
- 15 3. A coating composition as claimed in claim 2 comprising further binding

agents, for example casein or starch.

4. Coating compositions for coated papers substantially as hereinbefore described. 20

5. A process for preparing coating compositions for coated papers substantially as hereinbefore described.

Dated the 25th day of November, 1937.

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Reference has been directed, in pursuance of Section 7, sub-section (4), of the Patents and Designs Acts, 1907 to 1938, to Specifications Numbered 359,618 and 181,393.

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